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# Presence & IM Use Cases
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Abstract

The document describes several use cases of peering between two or more service providers that provide real time collaboration services and presence and IM in particular. These service providers create a peering relationship between themselves thus enabling their users to collaborate with users on other communities. The target of the document is to help understanding the requirements for peering between domains with regard to real time services

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## 1. Requirements notation

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [1].

## 2. Introduction

Real Time Collaboration (RTC) services are becoming as prevalent and essential for users on the Internet as email. While RTC services can, like email, be implemented directly by users in a point-to-point fashion, they are often provided for or on behalf of a community of users within an administrative domain. As the use of these services grows, users increasingly have the need to communicate with users not only within their own community but with those in other communities as well. In practice, each community is controlled by some authority, and so there is a need to provide for easier establishment of connectivity between communities, and the management of the inter-community link. This document contains a set of use cases that describe how peering between communities may be used. The use cases are intended to help in creating a set of requirements that will enable more secure and easier peering between communities that provide RTC services.

This document will use the terminology as defined in [2] unless otherwise is stated.

The following sections provide several use cases followed by a discussion on what these use cases may imply regarding the functionalities that need to be provided for in order to implement those use cases

## 3. Use Cases

### 3.1. Simple Interdomain Subscription

Assume that we have two peer networks [2], peer network A and peer network B. User Alice@A.com wants to subscribe to user Bob@B.com and get his presence information. In order to do so, Alice@A.com may connect directly to B.com and subscribe to Bob's presence information. However, peer network B is not willing to support subscriptions from any user in the network and is willing only to support its users and users that are coming from other peer networks that peer network B trusts.

In reality what will happen is that peer network A will connect to peer network B and will send Alice's subscription on Bob to peer network B. When peer network B has new information on Bob it will send notifications to peer network A that will pass them to Alice.

### 3.2. List Interdomain Subscription

This is the same as the simple interdomain subscription use case but in this case Alice subscribes to a URI that represents a list of users in peer network B [3]

### 3.3. Authorization Migration

if many users from one peering network watch presentities in another peering network, it may be possible that many watchers from one peering network will subscribe to the same user in the peering network. However, due to privacy constraints, each peering network will have to send multiple copies of the watched presence document. The privacy constraints enable a user to provide different persence document to e.g. friends, co-workers etc. The need to send multiple copies between the peering networks is very inefficient and causes redundant traffic between the peering networks.

In order to make the subscription between peering networks more efficient there needs to be a way to enable peering networks to agree to share privacy information between them. This will enabble sending a single copy (the full copy) of the presence document of of the watched user and letting the receiving peering network to be responsible to send the right values to the right watchers according to the privacy definitions of the watched user that were delegated to it from the peering network where the watched user resides.

### 3.4. Page mode IM

In this use case a user from one peer network sends a page mode [4] IM to a user on another peer network. As with subscription, the message will pass between the users through the SBEs [2] of the peer networks.

### 3.5. Session based IM

In this use case a user from one peer network creates an MSRP [5] session with a user from another peer network. The session establishment and the messages will pass between the users through the SBEs [2] of the peer networks.

### 3.6. Other services

In addition to media (voice/video) which are out of scope for this document only presence and IM are more or less fully standardized in real time collaboration. However there are many other services that are being standardized or may be implemented using minimal extensions to existing standards. These include:

- N-way chat - Enable a multi participant chat that will include users from many peer networks.

- File transfer - Send files from a user in one peer network to a user in another peer network.

- Document sharing - Sharing and editing a document between users in different peer networks

There are many more collaboration services that can be thought about. Enabling peering between networks for some of the services will create a basis for defining many more services

### 3.7. Federation

Federation as defined in [2] is a use case also in real time collaboration.

Real time collaboration services may benefit even more the voice/ video services from federation. Collaboration by its definition is something that is stronger where there many more parties collaborating and federation is certainly a good way to achieve greater collaboration.

Additional "side" services as security, lawful interception, logging and more may be provided to the peer networks that are members of the

federation.

Note that federation is also known as clearing house in the real time collaboration industry.

## 4. Discussion

The use cases described above may seem to be simple. However, in reality it is not so. The following describes issues that need to be solved in order to enable the creation of the use cases without the need to negotiate each peer network relationship separately and manually.

- Connectivity - A peer network needs a mechanism to learn the connectivity setting of the other peer network. Examples of connectivity parameters may be list of domains that the peer network is representing, firewall and NAT settings and more.

- Security - The peer network or the federation that is being connected to may require certain level of security in order to accept connections from another peer network. For example, peer network B may require that only TL'S will be used and it can also specifies the type and level of certificates that should be used. Community A will need a way to discover and use these parameters.

- Privacy - In many peer networks that provide real time collaboration services there are inter mechanisms that enable a user to configure the level of privacy that they wish to achieve. for example, a user may say that only certain users will be able to see him/her etc. Similar mechanisms are required to be in place in peering and in the federation model.

- Services - When two or more peer networks are peering for real time collaboration services, each peer network has to have an understanding regarding the services that are provided by the other peer network. This may/should include: A) The list of services that are provided by the peer network or the federation. B) Parameters for each services that may be different between peer networks. For example if the peer network provides for page mode IMs or session based IMs or both? Is presence filtering or partial notification is supported? Are subscription to resource lists [3] are supported?

- Mappings - Many times one peer network may have different set of values for different statuses of a user. For example "Do not Disturb" is translated to "Busy" in the other peer network. Each peer network that peers with another peer network or with a federation, should have means for translating the values that may differ appropriately.

- Good Citizenship - presence and IM have many network and processing demands both form the point of view of number of messages and the point of view of processing time. In order to

enable peer networks connecting to each other without overloading each other, each peer network should be able to learn what is the expected behavior by the connected to peer network or federation and act accordingly.

## 5. Security Considerations

This document discusses use cases for peering between communities. It is very clear that the protocols that will enable and make such peering easier will have significant security considerations, there are out of scope for a use case document.

# 6. References

## 6.1. Normative References

[1] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

## 6.2. Informative References

[2] Meyer, D., "SPEERMINT Terminology", draft-ietf-speermint-terminology-06 (work in progress), September 2006.

[3] Roach, A., Campbell, B., and J. Rosenberg, "A Session Initiation Protocol (SIP) Event Notification Extension for Resource Lists", RFC 4662, August 2006.

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[5] Campbell, B., "The Message Session Relay Protocol", draft-ietf-simple-message-sessions-18 (work in progress), December 2006.

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